ABSTRACT

A gallium nitride-based semiconductor device has a p-type layer that is a gallium nitride (GaN) compound semiconductor layer containing a p-type impurity and exhibiting p-type conduction. The p-type layer includes a top portion and an inner portion located under the top portion. The inner portion contains the p-type impurity and, in combination therewith, hydrogen. The top portion includes a region containing a Group III element and a Group V element at a non-stoichiometric atomic ratio.